

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000-CE-64-AD; Amendment 39-13291; AD 2003-17-16]

RIN 2120-AA64

Airworthiness Directives; Robert E. Rust Models DeHavilland DH.C1 Chipmunk 21, 22, and 22A Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that applies to certain Robert E. Rust (R.E. Rust) Models DeHavilland DH.C1 Chipmunk 21, 22, and 22A airplanes. This AD requires you to repetitively inspect the tailplane attachment brackets and replace each bracket at a specified time. This AD also requires you to repetitively inspect each joint of the port and starboard engine mount frame and the rear upper mount frame tubes for cracks and/or damage and repair any cracks and/or damage found. This AD is the result of reports of stress corrosion cracking found on the tailplane attachment brackets and fatigue cracking and chaffing of the engine mount frame. The actions specified by this AD are intended to prevent failure of the tailplane attachment brackets caused by stress corrosion cracking and failure of the engine mount, which could result in loss of the tail section and separation of the engine from the airplane respectively. Such failures could lead to loss of control of the airplane.

DATES: This AD becomes effective on October 10, 2003.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of October 10, 2003.

ADDRESSES: You may get the service information referenced in this AD from DeHavilland Support Limited, Duxford Airfield, Bldg. 213, Cambridgeshire, CB2 4QR, United Kingdom, telephone: +44 1223 830090, facsimile: +44 1223 830085, e-mail: info@dhsupport.com. You may view this information at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000-CE-64-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Cindy Lorenzen, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia; telephone: (770) 703-6078; facsimile: (770) 703-6097.

SUPPLEMENTARY INFORMATION:

Discussion

What Events Have Caused This AD?

We received reports that an unsafe condition exists on certain R.E. Rust Models DeHavilland DH.C1 Chipmunk 21, 22, and 22A airplanes. After reviewing several of these airplanes, stress corrosion cracking was found on the tailplane attachment brackets and fatigue cracks and chaffing were found on the engine mount frame.

Cracks in the engine mount frame were found in the area of the junction of the front and rear top tube and engine mounting foot support brackets and in the front of the frame. We have determined that fatigue is the cause of the cracks. The upper aft mount frame tubes were also found to have damage caused by chaffing by the cowling support rod.

What Is the Potential Impact if FAA Took No Action?

These conditions, if not corrected, could result in failure of the tailplane attachment brackets and failure of the engine mount. Such failures could lead to loss of control of the airplane.

Has FAA Taken Any Action to This Point?

We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to certain R.E. Rust Models DeHavilland DH.C1 Chipmunk 21, 22, and 22A airplanes. This proposal was published in the Federal Register as a supplemental notice of proposed rulemaking (NPRM) on April 15, 2003 (68 FR 18571). The supplemental NPRM proposed to require you to repetitively inspect the tailplane attachment brackets and replace each bracket at a specified time. The NPRM also proposed to require you to repetitively inspect each joint of the port and starboard engine mount frame and the rear upper mount frame tubes for cracks and/or damage and repair any cracks and/or damage found.

Was the Public Invited To Comment?

The FAA encouraged interested persons to participate in the making of this amendment. We did not receive any comments on the proposed rule or on our determination of the cost to the public.

FAA's Determination

What Is FAA's Final Determination on This Issue?

After careful review of all available information related to the subject presented above, we have determined that air safety and the public interest require the adoption of the rule as proposed except for minor editorial corrections. We have determined that these minor corrections:

- Provide the intent that was proposed in the supplemental NPRM for correcting the unsafe condition; and

- Do not add any additional burden upon the public than was already proposed in the Supplemental NPRM.

How Does the Revision to 14 CFR Part 39 Affect This AD?

On July 10, 2002, FAA published a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs FAA's AD system. This regulation now includes material that relates to special flight permits, alternative methods of compliance, and altered products. This material previously was included in each individual AD. Since this material is included in 14 CFR part 39, we will not include it in future AD actions.

Cost Impact

How Many Airplanes Does This AD Impact?

We estimate that this AD affects 54 airplanes in the U.S. registry.

What Is the Cost Impact of This AD on Owners/Operators of the Affected Airplanes?

We estimate the following costs to accomplish an inspection of the tailplane attachment brackets:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
32 workhours x \$60 per hour = \$1,920.	No parts required	\$1,920	\$1,920 x 54 = \$103,680

We estimate the following costs to accomplish any necessary replacements that would be required based on the results of the proposed inspection. We have no way of determining the number of airplanes that may need such replacement:

Labor cost	Parts cost	Total cost per bracket
3 workhours x \$60 per hour = \$180 per bracket	\$600 per bracket (2 brackets per airplane)	\$180 + 600 = \$780

We estimate the following costs to accomplish an inspection of the engine mount frame:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
16 workhours x \$60 per hour = \$960	No parts required	\$960	\$960 x 54 = \$51,840

The FAA has no method of determining the number of repairs or replacements each owner/operator will incur over the life of each of the affected airplanes based on the results of the proposed inspections. We have no way of determining the number of airplanes that may need such repair. The extent of damage may vary of each airplane.

Compliance Time of This AD

What Will Be the Compliance Time of This AD?

The compliance time for the initial inspections in this AD is "within the next 90 days after the effective date of this AD."

Why Is the Compliance Time Presented in Calendar Time Instead of Hours Time-in-Service (TIS)?

An unsafe condition specified by this AD is caused by corrosion. Corrosion can occur regardless of whether the aircraft is in operation or is in storage. Therefore, to assure that the unsafe condition specified in this AD does not go undetected for a long period of time, the compliance is presented in calendar time instead of TIS.

Regulatory Impact

Does This AD Impact Various Entities?

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

Does This AD Involve a Significant Rule or Regulatory Action?

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. FAA amends § 39.13 by adding a new AD to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-17-16 Robert E. Rust: Amendment 39-13291; Docket No. 2000-CE-64-AD.

(a) *What airplanes are affected by this AD?* This AD affects R.E. Rust Models DeHavilland DH.C1 Chipmunk 21, 22, and 22A airplanes, serial numbers C1-001 through C1-1014, that are type certificated in any category.

Note 1: We recommend all owners/operators of DeHavilland DH.C1 Chipmunk 21, 22, and 22A airplanes, serial numbers C1-001 through C1-1014, with experimental airworthiness certificates comply with the actions required in this AD.

(b) *Who must comply with this AD?* Anyone who wishes to operate any of the airplanes identified in paragraph (a) of this AD must comply with this AD.

(c) *What problem does this AD address?* The actions specified by this AD are intended to prevent failure of the tailplane attachment brackets caused by stress corrosion cracking and failure of the engine mount, which could result in loss of the tail section and separation of the engine from the airplane respectively. Such failures could lead to loss of control of the airplane.

(d) *What actions must I accomplish to address this problem?* To address this problem, you must accomplish the following:

(1) TAILPLANE ATTACHMENT BRACKETS

Compliance	Actions	Procedures
(i) Initially inspect within the next 90 days after October 10, 2003 (the date of this AD).	Inspect, using dye penetrant, the tailplane attachment brackets, part-number (P/N)	In accordance with British Aerospace Military Aircraft and Aerostructures (BAe Aircraft) Mandatory Technical News Sheet CT (C1) No. 176, Issue 2, dated November 1, 1997; and Civil Modification Mandatory Modification No. Chipmunk H357, dated March 12, 1984. Calculate fatigue hours by multiplying the TIS by the role factor in accordance with British Aerospace Mandatory Technical News Sheet Series: Chipmunk (C1), No. 138, Issue: 5, dated August 1, 1985.
(A) Inspect thereafter at intervals not to exceed 6 months or 150 fatigue hours, whichever occurs first, until the modification required by paragraph (d)(1)(ii) of this AD is incorporated.	C1.TP.167 (or FAA-approved equivalent part) for cracks.	
(B) When the modification required by paragraph (d)(1)(ii) is incorporated, you may terminate the repetitive inspections of the tailplane attachment brackets.		

(ii) At whichever of the following that occurs first: (A) Prior to further flight after the inspection where any crack is found; or (B) Upon accumulating 9,984 fatigue hours or within the next 90 days after October 10, 2003 (the effective date of this AD), whichever occurs later.	Replace the tailplane attachment bracket by incorporating Modification H357 (P/N C1.TP.313) or FAA-approved equivalent part number. Installing P/N C1.TP.313)or FAA-approved equivalent part number) terminates the repetitive inspection requirement of the tailplane attachment brackets.	In accordance with British Aerospace Military Aircraft and Aerostructures (BAe Aircraft) Mandatory Technical News Sheet CT (C1) No. 176, Issue 2, dated November 1, 1997; and Civil Modification No. Chipmunk H357, dated March 12, 1984. Calculate fatigue hours by multiplying the TIS by the role in accordance with British Aerospace Mandatory Technical News Sheet Series: Chipmunk (C1), No. 138, Issue: 5, dated August 1, 1985.
(iii) As of October 10, 2003 (the effective date of this AD).	Only install a tailplane attachment bracket that is P/N C1.TP.313. or FAA-approved equivalent part number.	Not applicable.
(iv) As of October 10, 2003 (the effective date of this AD).	Incorporate the following into the Aircraft Logbook: “In accordance with AD 2003–17–16, the tailplane attachment bracket is life limited to 9,984 fatigue hours.”	In accordance with British Aerospace Military Aircraft and Aerostructures (BAe Aircraft) Mandatory Technical News Sheet CT (C1) No. 176, Issue 2, dated November 1, 1997.

(2) ENGINE MOUNT FRAMES

Actions	Compliance	Procedures
(i) Inspect each joint of the port and starboard engine mount and the rear upper mount frame tubes for cracks and damage.	Initially inspect within the next 90 days after October 10, 2003 (the effective date of this AD). Repetitively inspect thereafter at intervals not to exceed 600 hours TIS.	In accordance with British Aerospace Aerostructures Limited (BAe Aircraft) Mandatory Technical News Sheet CT (C1) No. 190, Issue 2, dated April 1, 1995.
(ii) If cracks or damage is found during any inspection required in paragraph (d)(2)(i) of this AD: (A) obtain a repair scheme from the manufacturer through the FAA at the address specified in paragraph (e) of this AD and incorporate this repair scheme, or repair in accordance with FAA Advisory Circular (AC) 43.13–1B, Change 1, dated September 27, 2001, Chapter 4, Paragraph 4–99; or (B) replace with a new or serviceable part.	Prior to further flight after the inspection in which any crack or damage is found. Repetitively inspect as required in paragraph (d)(2)(i) of this AD.	Repair in accordance with AC 43.13–1B, Change 1, dated September 27, 2001, Chapter 4, Paragraph 4–99 or in accordance with the repair scheme obtained from DeHavilland Support Limited, Duxford Airfield, Bldg. 213, Cambridgeshire, CB2 4QR, United Kingdom. Obtain this repair scheme through the FAA at the address specified in paragraph (f) of this AD. Replace in accordance with British Aerospace Aerostructures Limited (BAe Aircraft) Mandatory Technical News Sheet CT (C1) No. 190, Issue 2, dated April 1, 1995, or AC 43.13–1B, Change 1, dated September 27, 2001, Chapter 4, Paragraph 4–99.

(iii) Bind the rear upper mount frame tubes with a high density polythene tape at the location where the cowl support rod clip is secured.	Prior to further flight after any inspection required in paragraph (d)(2)(i) of this AD if no cracks or damage is found, and prior to further flight after any repairs or replacement is made as required in paragraph (d)(2)(ii) of this AD.	In accordance with British Aerospace Aerostructures Limited (BAe Aircraft) Mandatory Technical News Sheet CT (C1) No. 190, Issue 2, dated April 1, 1995.
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(e) *Can I comply with this AD in any other way?* To use an alternative method of compliance or adjust the compliance time, use the procedures in 14 CFR 39.19. Send these requests to the Manager, Atlanta Aircraft Certification Office (ACO). Contact Cindy Lorenzen, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office, 1895 Phoenix Boulevard, Suite 450, Atlanta, Georgia; telephone: (770) 703-6078; facsimile: (770) 703-6097.

(f) *Are any service bulletins incorporated into this AD by reference?* Actions required by this AD must be done in accordance with British Aerospace Military Aircraft and Aerostructures (BAe Aircraft) Mandatory Technical News Sheet CT (C1) No. 176, Issue 2, dated November 1, 1997; Civil Modification Mandatory Modification No. Chipmunk H357, dated March 12, 1984; British Aerospace Mandatory Technical News Sheet Series: Chipmunk (C1), No. 138, Issue: 5, dated August 1, 1985; and British Aerospace Aerostructures Limited (BAe Aircraft) Mandatory Technical News Sheet CT (C1) No. 190, Issue 2, including Appendix 1 (Part B), dated April 1, 1995. The Director of the Federal Register approved this incorporation by reference under 5 U.S.C. 552(a) and 1 CFR part 51. You may get copies from DeHavilland Support Limited, Duxford Airfield, Bldg. 213, Cambridgeshire, CB2 4QR, United Kingdom, telephone: +44 1223 830090, facsimile: +44 1223 830085, e-mail: info@dhsupport.com. You may view copies at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) *When does this amendment become effective?* This amendment becomes effective on October 10, 2003.

Issued in Kansas City, Missouri, on August 19, 2003.
Michael Gallagher,
Manager, Small Airplane Directorate, Aircraft Certification Service.
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